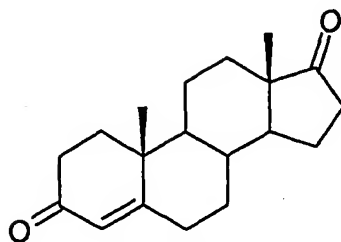


Claims:

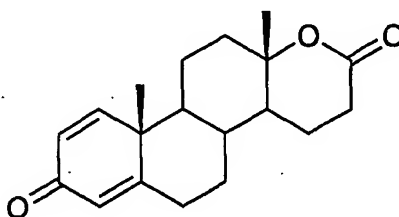
1. A method for the transformation of 4-androsten-3,17-dione, Formula I,

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**Formula I**

to 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione, Formula II

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**Formula II**

- comprising contacting a compound of Formula I in a bioconversion medium with a  
15 filamentous species of *Fusarium* capable of performing the transformation.

2. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione  
according to Claim 1 wherein the *Fusarium* species is *Fusarium solani*.
- 20 3. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione  
according to Claim 1 wherein the *Fusarium* species is *Fusarium solani* strain ATCC  
46829.
4. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione  
25 according to Claim 3 wherein the substrate concentration is between 1 g/L and 80 g/L.

5. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione according to Claim 3 wherein the substrate concentration is between 10 g/L and 80 g/L.
- 5 6. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione according to Claim 3 wherein the substrate concentration is between 20 g/L and 80 g/L.
- 10 7. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione according to Claim 3 wherein the substrate concentration is between 40 g/L and 80 g/L.
- 15 8. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione according to Claim 3 wherein the substrate concentration is between 50 g/L and 70 g/L.
9. A method of producing 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione according to Claim 3 further comprising the steps of:
- a) preparing a primary seed culture of *Fusarium solani* ATCC46829;
  - 20 b) preparing a secondary seed culture from the culture of step a);
  - c) inoculating a bioconversion medium with the culture of step b);
  - d) adding micronized 4-androsten-3,17-dione to the bioconversion medium;
  - e) monitoring the biotransformation for completion;
  - 25 f) collecting the solids of the bioconversion medium;
  - g) extracting the solids; and
  - h) isolating 17 $\alpha$ -oxo-*D*-homo-1,4-androstadiene-3,17-dione.
10. A method according to Claims 1-9 wherein the bioconversion medium  
30 contains a detergent and a natural oil.
11. A method according to Claim 10 wherein the detergent is octylphenoxy polyethoxy ethanol and the natural oil is soybean oil.